IE-MiniMc LFPT and Telco/LFPT

Operation Manual

FCC Radio Frequency Interference Statement

Class A (using DC terminal power or Power Over Ethernet (POE))

This equipment has been tested and found to comply with the limits for a Class A computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The use of non-shielded I/O cables may not guarantee compliance with FCC RFI limits. This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

Class B (using any DC jack options)

This equipment has been tested and found to comply with the limits for a Class B computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The use of non-shielded I/O cables may not guarantee compliance with FCC RFI limits. This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

Warranty

IMC Networks warrants to the original end-user purchaser that this product, EXCLUSIVE OF SOFTWARE, shall be free from defects in materials and workmanship under normal and proper use in accordance with IMC Networks' instructions and directions for a period of six (6) years after the original date of purchase. This warranty is subject to the limitations set forth below.

At its option, IMC Networks will repair or replace at no charge the product which proves to be defective within such warranty period. This limited warranty shall not apply if the IMC Networks product has been damaged by unreasonable use, accident, negligence, service or modification by anyone other than an authorized IMC Networks Service Technician or by any other causes unrelated to defective materials or workmanship. Any replaced or repaired products or parts carry a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

To receive in-warranty service, the defective product must be received at IMC Networks no later than the end of the warranty period. The product must be accompanied by proof of purchase, satisfactory to IMC Networks, denoting product serial number and purchase date, a written description of the defect and a Return Merchandise Authorization (RMA) number issued by IMC Networks. No products will be accepted by IMC Networks which do not have an RMA number. For an RMA number, contact IMC Networks at PHONE: (800) 624-1070 (in the U.S and Canada) or (949) 465-3000 or FAX: (949) 465-3020. The end-user shall return the defective product to IMC Networks, freight, customs and handling charges prepaid. End-user agrees to accept all liability for loss of or damages to the returned product during shipment. IMC Networks shall repair or replace the returned product, at its option, and return the repaired or new product to the end-user, freight prepaid, via method to be determined by IMC Networks. IMC Networks shall not be liable for any costs of procurement of substitute goods, loss of profits, or any incidental, consequential, and/or special damages of any kind resulting from a breach of any applicable express or implied warranty, breach of any obligation arising from breach of warranty, or otherwise with respect to the manufacture and sale of any IMC Networks product, whether or not IMC Networks has been advised of the possibility of such loss or damage.

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Every reasonable effort has been made to ensure that IMC Networks product manuals and promotional materials accurately describe IMC Networks product specifications and capabilities at the time of publication. However, because of ongoing improvements and updating of IMC Networks products, IMC Networks cannot guarantee the accuracy of printed materials after the date of publication and disclaims liability for changes, errors or omissions.

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About the IE-MiniMc LFPT and Telco/LFPT

The IE-MiniMc LFPT and Telco/LFPT Industrial Ethernet miniature media converter features 10/100 switching copper-to-fiber conversion, miniature size, plug-and-play operation, and as a PD device, is compliant to the IEEE 802.3af Power Over Ethernet (PoE) standard. The IE-MiniMc LFPT and Telco/LFPT supports an extended voltage range as well as extended operating temperature.

The feature Link Fault Pass Through (LFPT) is permanently enabled on the media converter to assist the customer in troubleshooting.

Installing IE-MiniMc LFPT and Telco/LFPT

The IE-MiniMc LFPT and Telco/LFPT installs virtually anywhere: as a standalone, table-top device or on a DIN rail. As a standalone device, install IE-MiniMc LFPT and Telco/LFPT in locations with extremely limited space. Also included are Velcro strips to attach the device to most surfaces. A PowerTray/18 is available for high density applications.

DIN Rail Mounting

The IE-MiniMc LFPT and Telco/LFPT can be mounted with two DIN Rail clips, a hardware option available through IMC Networks. The DIN Rail clips include screws to allow the installation onto a DIN Rail. Install the screws into DIN Rail clips, which should be mounted perpendicular to the DIN Rail. Snap the converter onto the clips. To remove the converter from the DIN Rail, use a flat-head screwdriver into the slot to gently pry the converter from the rail.

NOTE
The DIN clips are designed for use on a DIN-35 rail.

Powering the IE-MiniMc LFPT and Telco/LFPT

The IE-MiniMc LFPT and Telco/LFPT includes multiple powering options:

- A country-specific, high-reliability AC power adapter (included)
- The IEEE 802.3af Power over Ethernet standard; draws power from power sourcing equipment
- The 4-terminal DC power block
- IE-PowerTray/18 for Rack Mounting

About Power Over Ethernet (PoE) and IE-MiniMc LFPT and Telco/LFPT

Power Over Ethernet technology allows the IE-MiniMc LFPT and Telco/LFPT to be a Powered Device (PD) and draw power when connected to Power Sourcing Equipment (PSE). Power Sourcing Equipment distributes an electrical current across existing copper data cabling.

LED Operation

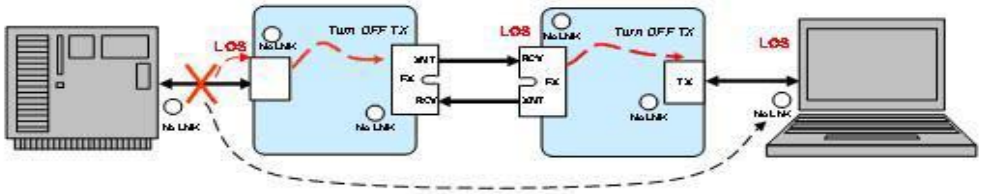
Each IE-MiniMc LFPT and Telco/LFPT includes two LEDs, located on the RJ-45 connector.

LED functions are as follows:

FX LNK/ACT	Glows green when a link is established on the fiber port; blinks green when activity is detected on the fiber port.
TX LNK/ACT	Glows amber when a link is established on the copper port; blinks amber when activity is detected on the copper port.

Link Fault Pass Through (LFPT)

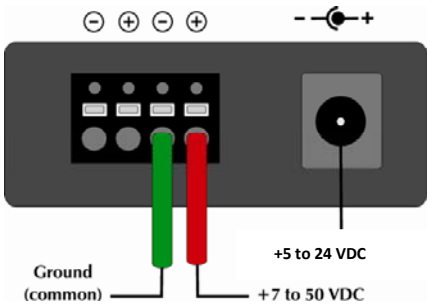
LFPT is a troubleshooting feature that combines TX Link Loss and FX Link Loss on each media converter. LFPT is permanently enabled on the IE-MiniMc LFPT and Telco/LFPT, and if two of them are installed back to back, a failure on any segment will be propagated across all links and all LEDs will extinguish.



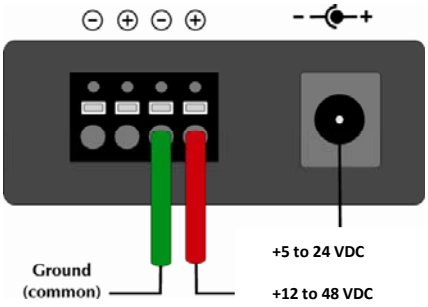
NOTE
A fault on any segment will force all LINK LEDs off.

DC Terminal Block Wiring Instructions

The IE-MiniMc LFPT and Telco/LFPT can also be powered with the DC terminal block. From a power source, connect to any one positive and any one negative terminal on the IE-MiniMc LFPT and Telco/LFPT. Shown below are the IE-MiniMc LFPT (left) and IE-MiniMc Telco/LFPT (right).



Non-Telco Power



Telco Power

NOTE
When using stranded wire, the leads must be tinned. The DC terminal block is protected against mis-wiring; if mis-wired, the chassis will not function. The chassis is internally connected to the negative power terminal.

Cascading DC Power

When installing multiple IE-MiniMc LFPT and Telco/LFPT units on a DIN rail, the end user can connect to one DC input source, and then cascade from one DC block to the next, until reaching the maximum current available.

IMC Networks Technical Support

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Specifications

Ethernet Connections

10/100 BaseT, Auto Negotiation, Auto-Cross, Flow Control, 1916 MTU, Broadcast Storm Protection, Full Line-Rate Forwarding.

Input Specifications

DC terminal	7 to 50 VDC, 1-0.1A
DC Terminal **(Telco Model)**	12 to 48 VDC (Telco Compatible*)
DC jack	5 to 24 VDC
PoE	When IE-MiniMc LFPT and Telco/LFPT uses PoE technology to be a PD, the maximum supply voltage is 50V

* Telco compatible 48 VDC allows for an absolute maximum voltage of 56.5 VDC.

AC Wall Adapter

100 to 240 ±10% VAC input, 5 VDC output, 2A max.

Operating Temperature

-40°F to +185°F (-40°C to +85°C) DC configuration
+14°F to +122°F (-10°C to +50°C) with AC wall adapter

Storage Temperature

-31°F to +167°F (-35°C to +75°C)

Humidity

5 to 95% (non-condensing); 0 to 10,000 ft. altitude

Dimensions

0.83″H x 1.80″W x 3.35″D (2.11 x 4.57 x 8.51 cm)

Fiber Optic Cleaning Guidelines

Fiber Optic transmitters and receivers are extremely susceptible to contamination by particles of dirt or dust, which can obstruct the optic path and cause performance degradation. Good system performance requires clean optics and connector ferrules.

1. Use fiber patch cords (or connectors, if you terminate your own fiber) only from a reputable supplier; low-quality components can cause many hard-to-diagnose problems in an installation.
2. Dust caps are installed at IMC Networks to ensure factory-clean optical devices. These protective caps should not be removed until the moment of connecting the fiber cable to the device. Should it be necessary to disconnect the fiber device, reinstall the protective dust caps.
3. Store spare caps in a dust-free environment such as a sealed plastic bag or box so that when reinstalled they do not introduce any contamination to the optics.
4. If you suspect that the optics have been contaminated, alternate between blasting with clean, dry, compressed air and flushing with methanol to remove particles of dirt.

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can cause damage to your add-in modules. Always observe the following precautions when installing or handling an add-in module or any board assembly.

1. Do not remove unit from its protective packaging until you're ready to install it.
2. Wear an ESD wrist grounding strap before handling any module or component. If you do not have a wrist strap, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.
3. Hold boards by the edges only; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static-free surface, ESD pad or in a proper ESD bag. Do not slide the board over any surface.

WARNING! Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service technician and use tools and techniques that conform to accepted industry practices.

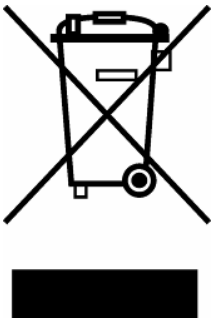
Safety Certifications

UL/CUL: Listed to Safety of Information Technology Equipment, including Electrical Business Equipment.

CE: The products described herein comply with the Council Directive on Electromagnetic Compatibility (2004/108/EC) and the Council Directive on Electrical Equipment Designed for use within Certain Voltage Limits (2006/95/EC). Certified to Safety of Information Technology Equipment, Including Electrical Business Equipment. For further details, contact IMC Networks.

Class 1 Laser product, Luokan 1 Laserlaite,
Laser Klasse 1, Appareil A'Laser de Classe 1

European Directive 2002/96/EC (WEEE) requires that any equipment that bears this symbol on product or packaging must not be disposed of with unsorted municipal waste. This symbol indicates that the equipment should be disposed of separately from regular household waste. It is the consumer's responsibility to dispose of this and all equipment so marked through designated collection facilities appointed by government or local authorities. Following these steps through proper disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about proper disposal, please contact local authorities, waste disposal services, or the point of purchase for this equipment.



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